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Indian Standard

AUTOMOTIVE VEHICLES — WHEEL GUARDS FOR PASSENGER CARS — PERFORMANCE REQUIREMENTS

UDC 629·114·6-763 : 620·16

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

February 1994

Price Group 2

Automotive Body and Chassis Sectional Committee, TED 6

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards after the draft finalized by the Automotive Body and Chassis Sectional Committee had been approved by the Transport Engineering Division Council.

This Indian Standard is based on Safety Standards (SS 34) 'Guards for passenger cars' issued by Automotive Research Association of India (ARAI), Pune.

The Committee responsible for the preparation of this standard is given in Annex A.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it may be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

AUTOMOTIVE VEHICLES — WHEEL GUARDS FOR PASSENGER CARS — PERFORMANCE REQUIREMENTS

1 SCOPE

1.1 This standard specifies the requirements for wheel guards for passenger cars for use on road, having at least four wheels and a maximum design speed exceeding 25 km/h.

2 TERMINOLOGY

2.1 Wheel Guard

Wheel guard (mud guard) means that part of the containment device (or a part of body structure) which is designed to protect other road users, against thrown up stones, mud and water.

3 REQUIREMENTS

3.1 General

3.1.1 Passenger cars shall be provided with wheel guards which may consist of parts of the body work.

3.1.2 The wheel guards shall also provide adequate safety from any dangers due to contact with the moving wheels.

3.1.3 The wheel guards may consist of several components, provided no gaps exist between or within the individual parts when assembled.

3.1.4 The wheel guards shall be firmly attached. However, they may be detachable either as a unit or in parts.

4 TEST REQUIREMENTS

4.1 The wheel guards shall meet the following requirements when the vehicle is in running condition and the wheels are in the dead ahead position.

4.1.1 In the part formed by radial planes at an angle of 30° to the front and 50° to the rear of the centre of the wheels (*see* Fig. 1) the overall width (q) of the wheel guards shall be at least sufficient to cover the total tyre width (b) taking into account the extremes of tyre/wheel combination as specified by the manufacturer, in the case of twin wheels, the total width over the two tyres (t) shall be taken into account.

4.1.2 For the purpose of determining the widths referred to in **4.1.1**, the labelling (marking) and decorations, protective bends or rings on tyre walls are not taken into account.

4.1.3 The rear of the wheel guards shall not terminate above a horizontal plane 150 mm above the axis of rotation of the wheels (as measured at the wheel centres) and furthermore, the intersection of the edge of the wheel guard with this plane (point A, Fig. 1), shall lie outside the median longitudinal plane of the tyre, or in the case of twin wheels, the median longitudinal plane of the outermost tyre.

4.1.4 The contour and location of the wheel guards shall be such that they are as close to the tyre as possible; and in particular, within the part formed by the radial planes referred to in **4.1.1**, and they shall satisfy the following requirements.

4.1.5 The projection situated in the vertical plane of the axis of the depth (p) of the outer edge of the wheel guards, measured in the vertical longitudinal plane passing through the centre of the tyre, shall be at least 30 mm. This depth may be reduced progressively to zero at the radial planes specified in **4.1.1**.

4.1.6 The distance (c) between the lower edges of the wheel guards and the axis passing through the centre of the wheels shall not exceed $2r$, 'r' being the static radius of the tyre.

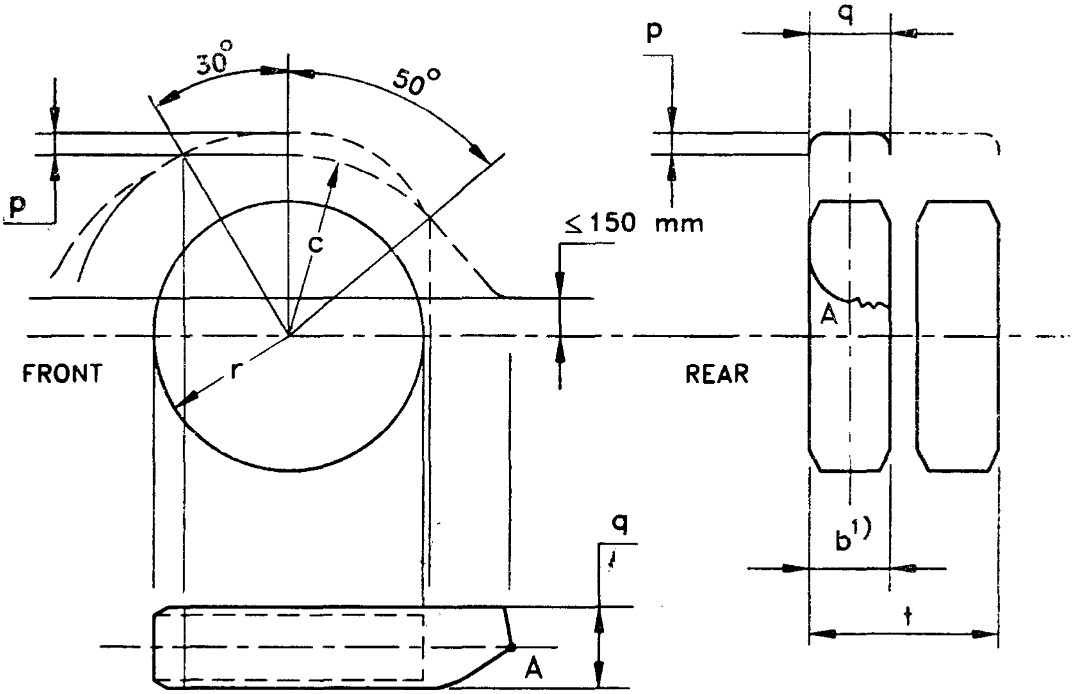
4.1.7 In the case of vehicles having adjustable suspension height, the above-mentioned requirements shall be met then the vehicle is in the normal running position specified by the vehicle manufacturer.

4.1.8 The vehicle is on a flat, horizontal surface.

4.1.9 The vehicle is in running order and its weight includes coolant, oils, fuel, tools, spare wheel and driver. The driver's weight shall be assumed as being 75 kg.

4.1.10 The distribution of weight on the front and rear axle shall be as specified by the manufacturer.

4.1.11 The vehicle shall have tyres and rims fitted as specified by the vehicle manufacturer



a = point of interaction of rear edge of wheel guard with a plane 150 mm above wheel centre;

h = width of single tyre;

t = total width twin tyres;

q = wheel guard width which shall be at least equal to and aligned with 'b' to 't';

1) The distance 'b' is measured at the top of tyre.

p = depth of wheel guard which shall be at least 30 mm;

r = tyre static radius; and

c = maximum distance from wheel centre to edge of wheel guard in section limited by the two radial planes which shall not be more than $2r$.

FIG. 1 CONTOUR AND LOCATION OF WHEEL GUARD

and the tyres inflated to the pressures specified by the tyre manufacturer.

4.1.12 The suspension, if adjustable, is at its normal running height specified by the manufacturer.

5 EQUIPMENT ACCURACY

5.1 Equipment for angular measurement shall have a least count of 1°.

5.2 Equipment for linear measurement shall have a least count of 1 mm.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Automotive Body and Chassis Sectional Committee, TED 6

Chairman	*Representing*
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Shri M. Balakrishanan	Thiruvalluvar Transport Corporation, Madras
Shri S. R. Tapade	Central Institute of Road Transport, Pune
Shri S. Kumar (*Alternate*)	
Shri J. R. Bilgi	Bajaj Tempo Ltd, Pune
Shri R. M. Kanitkar (*Alternate*)	
Shri S. K. Chakraborty	Controllerate of Inspection (Vehicles), Ahmednagar
Shri Ramesh Dhar	DCM Toyota Ltd, New Delhi
Director (Motive Power)	Research, Designs and Standards Organization, Lucknow
Shri Harjit Singh	HMT Ltd, Pinjore
Shri J. S. Sharma (*Alternate*)	
Shri K. C. Jain	Escorts Ltd, Faridabad
Shri Raju Aggarwal (*Alternate*)	
Shri Harnam Singh	Vehicle Factory, Jabalpur
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Shri D. N. Dave (*Alternate*)	
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Shri S. Madhava Rao (*Alternate*)	
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Secretary

Shri T. M. Majumder
Director (TED), BIS

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This Indian Standard has been developed from Doc : No. TED 6 (154)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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Printed at Paragon Enterprises, Delhi, India